MINUTES
U.S. NUCLEAR REGULATORY COMMISSION/U.S. DEPARTMENT OF ENERGY
QUARTERLY MANAGEMENT MEETING
JULY 1, 1996

On July 1, 1996, staff from the U.S. Nuclear Regulatory Commission, Division of Waste Management met with representatives of the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM) for a quarterly management meeting. The meeting was held at NRC headquarters in Rockville, Maryland with a video conference connection to the Yucca Mountain Site Characterization Office in Las Vegas, Nevada, and telephone connection to DOE Headquarters in Washington, DC and the Center for Nuclear Waste Regulatory Analysis, in San Antonio, Texas. Other attendees at these locations represented the State of Nevada; Nye and Clark County, Nevada; Nevada Legislative Counsel Bureau; the United States Nuclear Waste Technical Review Board (NWTRB); General Accounting Office; Nuclear Energy Institute (NEI); the Center for Nuclear Waste Regulatory Analysis and DOE contractors. Attachment 1 provides the meeting agenda and Attachment 2 lists the attendees.

The meeting was opened with a brief discussion on the Total System Performance Assessment (TSPA) Technical Exchange. NRC and DOE agreed that both parties benefited from a better understanding of the issues impacting TSPA and steps were taken to resolve issues and narrow the differences on others. Both DOE and NRC considered the technical exchange to be highly successful. DOE indicated that there has not been any indications from Congress regarding the new legislation, and that they are cautiously optimistic and moving forward with preparation of their FY98 budget.

In a discussion on the Multiple Purpose Canisters (MPC), DOE indicated that although there is no funding in 1997, canister specifications will be made available to the industry, and Electrical Power Research Institute plans to submit Topical Safety Analysis Report (TSAR) on Dry Transfer System by the end of the year. DOE indicated that the TSAR for Phase 1, Interim Storage, will be submitted in May 1997 and requests an 18 month review by NRC.

NRC staff indicated that the Standard Review Plan for siting an interim storage facility is tentatively scheduled for release by the end of 1996. The Commission will go into final rulemaking for 10 Code of Federal Regulations (CFR) Part 100 independent of changes in 10 CFR Part 72. NRC is considering enhancing Part 72 in the future. Part 72, if upgraded, will probably be more flexible.

DOE plans to resubmit the topical report for burn up credit for actinides only at the end of the 1996 calendar year, and expects to submit four technical

reports using data from other sources (i.e., no new experiments, but will see what data is available from other sources). NRC indicated that if new experiments are not planned, and if the new data is suitable, it will aid in eventual approval of the topical report.

EPA has yet to send the proposed standard to Office of Management and Budget. With regard to revisions to Part 60, the NRC staff is currently preparing the conceptual framework for this revision. As part of this effort, the NRC staff is investigating scenario classes, key parameter values and extrapolation of current conditions. The NRC continues to believe in defense in depth, even if specific subsystem performance standards are eliminated. DOE provided NRC with suggestions for clarification and updates to 10 CFR part 60 (Attachment 3).

Concerns were discussed relative to the schedule for the necessary Commission concurrence to revisions to Part 960 and the timing between revisions to Part 60 versus 960. In addition, DOE stated that the Viability Assessment would not be impacted by these changes to the regulatory framework.

DOE briefed the NRC on the actions taken by Office of Quality Assurance to resolve problems identified with the implementation of the U.S. Geological Survey quality assurance program. DOE has completed a detailed audit and a trend analysis is in progress (see Attachment 4). Although DOE management currently appears to be taking aggressive action to ensure these concerns do not affect the quality of the work on the program, NRC management is concerned because of the implications of the impacts of a reduced budget and future corrective actions based on trends in the QA program, and stated they will continue to monitor the DOE actions described in attachment 4 using its On-Site Representatives, future QA and management meetings.

As a follow up to previous management meeting discussions concerning DOE's process for documenting important decisions in its HLW program, DOE provided a status of its current efforts on documenting its decision process (Attachment 5). DOE is sensitive to the need to have adequately documented work and has prepared a position paper on the subject. NRC indicated that it would like be involved early and have the opportunity to review and comment on a draft of the position paper and suggested a video conference on the subject. Discussions on this subject will continue.

NRC gave an overview of the lessons learned from the revised approach to technical exchanges. Positive results have resulted from defining clear objectives for both NRC and DOE prior to each technical exchange and meeting. The TSPA technical exchange was particularly useful and both sides learned

from the exchange. In particular, NRC noted that the multiple smaller reviews were very effective, the facilitation/discussion leader worked well, the objective oriented and focused meetings proved more effective, and the proper scoping of meetings facilitates a positive conclusion to the meetings. NRC provided a list of administrative suggestions for consideration at future technical exchanges (See Attachment 6).

At the last management meeting, DOE had proposed that the pilot program for the NRC issue resolution process consider one of three topics: volcanism, climatology, or regional hydrology. At this meeting, NRC indicated that the best target for the pilot project is considered to be climatology because: (1) the information on climatology is fairly mature; (2) climatology is directly related to the important long term infiltration issue; (3) NRC staff presented a paper on a potential resolution of this topic at the last HLW conference; (4) the Nuclear Waste Technical Review Board will focus on climatology at its next meeting; and (5) resolution of the issue (if achieved) could be considered for inclusion in the anticipated revision to 10 CRR Part 60.

In closing, DOE indicated that the meeting was a good balance between technical and management issues. NRC indicated that it would take recommendations from State and Counties on the revision to Part 60. The State of Nevada noted that the Licensing Support System Administrative Review Panel should comment on documentation decision system and the market driven approach for the MPC should interest the stakeholders.

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ATTACHMENT 1

NRC/DOE MANAGEMENT MEETING AGENDA
July 1, 1996
Video Conference

1:30 EST

● **OPENING REMARKS**	ALL
● **PROGRAM STATUS**	
- Budget/Legislative Update	DOE
- Update on OWAST Activities	DOE
- RW-1 Briefing to NRC Commission	DOE
- Status of WICS	DOE
- Program Plan	DOE
● **REGULATORY AND LICENSING**	
- Update on EPA Standard/ Revisions to Part 60	AUSTIN
- Status Update on 10 CFR 960	DOE
- DOE Plans Regarding USGS QA Results	DOE
- Update on DOE Decision Documentation	DOE
- Lessons Learned from Revised Approach to Technical Exchanges	FEDERLINE
- Feedback from TSPA Technical Exchange	NRC\DOE
● **OPEN ITEMS FROM PREVIOUS MANAGEMENT MEETING**	
- Feedback on Issue Resolution Potential Pilot Program Topic	BELL
● **CLOSING REMARKS**	ALL

5:00 EST Adjourn

ATTACHMENT 2

NRC-DOE MANAGEMENT MEETING ATTENDANCE LIST
July 1, 1996
DOE DC/Forestal - Las Vegas/YMSCO
Videoconference DOE Forestal
Washington, D.C.

PRINTED NAME	ORGANIZATION/COMPANY	PHONE
Priscilla Bunton	DOE	202-586-8365
Bob Gamble	DOE	702-295-9611
Alan Brownstein	DOE	202-586-4973
Charles J. Haughney	NRC/SFPO	301-415-8360
John Austin	NRC/NMSS/DWM	301-415-7252
Bill Reamer	NRC	301-415-1640
John Greeves	NRC/NMSS	301-415-7358
Virginia Colton-Bradley	NRC/ACNW	301-415-7372
Steve Frishman	NV/NWPO	702-687-3744
Judy Treichel	NV/NW Task Force	702-248-1127
John O. Thoma	NRC	301-415-7293
Michael Bell	NRC/NMSS/DWM	301-415-7286
Margaret Federline	NRC/NMSS/DWM	301-415-6708
Jean Yonker	M&O	702-295-5169
R.E. Spense	DOE/YMPO	702-794-5584
Susan B. Jones	DOE/YMSCO/AMSP	702-794-5582
Thomas Bjerstedt	DOE/YMSCO	702-794-1362
Diane McAlister	PMO/AMSL	702-794-1344
John Meder	Nevada Legislative Counsel Bureau	
Nick Stallavato	Nye County	702-295-6142
Mal Murphy	Nye County	360-943-5610
Dennis Bechtel	Clark County	702-455-5175
Abe Van Luik	YMSCO/AMSL	702-794-1127
Chris Einberg	DOE	202-586-8869

NRC-DOE MANAGEMENT MEETING ATTENDANCE LIST
July 1, 1996
DOE DC/Forestal - Las Vegas/YMSCO
Videoconference DOE Forestal
Washington, D.C.

PRINTED NAME	ORGANIZATION/COMPANY	PHONE
Susan Rives	DOE	702-794-7905
Susan Zimmerman	NV NWPO	702-687-3744
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April Gil	DOE/YMPO/AMSL	702-794-5578
E. Von Tiesenhausen	Clark County	702-455-5175
Chad Glenn	NRC/OR	702-388-6125
Robert Murry	M&O	702-295-4894
David Fenster	M&O/WCFS	202-488-6723
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Ralph Anderson	NEI	202-739-8111
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Nancy J. Chappell	DOE	702-794-1928

ATTACHMENT 3

YUCCA MOUNTAIN PROJECT

Studies

Updating and Streamlining the Regulatory Framework: Proposed Changes to 10 CFR 60

Presented to:
DOE/NRC Bimonthly Management Meeting

Presented by:
April V. Gil
Licensing Team Leader
Yucca Mountain Site Characterization Office

July 1, 1996

U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

Update and Streamline the Regulatory Framework to Reflect

- Knowledge and Experience Gained
- Policy Changes
- Focus on Site Performance

Knowledge and Experience Gained Has Shown

- Focus should be on issues most important to protecting public health and safety and that are pertinent to the Yucca Mountain site

- Although significant progress has been made in understanding the site and its performance, site characterization cannot resolve all uncertainties

Policy Changes Have Focused Site Investigations and the Regulatory Framework on a Single Site

- Consistent with 1992 Energy Policy
- Regulatory focus should be on optimizing repository performance
  - Allow demonstration of Total System Performance objectives
  - Quantitative subsystem requirements and prescriptive design requirements should be eliminated

Focus on Site Performance

- Regulations should be flexible to permit evaluation of site performance
  - Decisions should be based on the reasonable assurance concept
  - Overly prescriptive requirements regarding level of detail required should be eliminated
- Generic siting criteria are no longer necessary

Summary of Suggested Changes

- Focus on those issues important to safety
- Focus on Yucca Mountain site
- Clarify reasonable assurance concept
- Reduce uncertainty in interpretation of regulation
- Allow focus on optimizing repository performance

Individual Proposed Recommendations

- Suggest deleting requirement to discuss design alternatives in license application 60.21
- Suggest explicitly indicate that safeguards requirements do not apply to postclosure
- Suggest removing language that invokes EPA standards for preclosure radiation protection
- Suggest revising design criteria to allow risk-based demonstration of compliance
- Suggest implementing NRC-proposed revisions to clarify design basis events and DOE comments on those proposed revisions

Summary

Regulations should

- Provide for a reasonable evaluation of a Yucca Mountain repository on the basis of overall system performance
- Implement a reasonable assurance concept that recognizes the uncertainties inherent to geologic disposal
- Take advantage of information that:
  - We have learned during a decade of site characterization and
  - We will learn during construction and preclosure operations of the repository

ATTACHMENT 4

YUCCA MOUNTAIN PROJECT

Studies

Briefing on Actions Being Taken by OQA to Resolve Problems Identified with the Implementation of the USGS QA Program

Presented to:
DOE/NRC Bimonthly Management Meeting

Presented by:
Richard E. Spence, Director
Yucca Mountain Quality Assurance Division

July 1, 1996

U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

Three Identified Problem Areas

- Procurement (Dealing with USGS Suppliers)
- Review of Technical Reports
- Corrective Action Implementation

Action for Resolution

Procurement

- **Deficient Condition Summary**
  - USGS procedure allowed suppliers to be approved for services without having an approved QA Program
- **Actions**
  - CAR YMQAD-96-C004 issued 4/8/96
  - CAR included action to resolve all identified procurement issues and controls on any new procurements
  - YMQAD personnel actively working with USGS on resolution. Scheduled completion date, on or before 9/30/96
- **Status**
  - In process
- **Impacts**
  - To date, no significant impacts to USGS work overall

Action for Resolution

(Continued)

Review of Technical Reports

- **Deficient Condition Summary**
  - Incomplete disposition of review comments.
- **Actions**
  - CAR YMQAD-96-C002 issued 1/16/96.
  - CAR corrective action includes complete review of all reviews performed on the USGS Technical Reports.
  - CAR response accepted by YMQAD.
- **Status**
  - In process.
  - Scheduled for resolution on or before 7/31/96.
- **Impacts**
  - To date, no significant impacts to USGS work products have been identified.

Action for Resolution

(Continued)

Corrective Action Implementation

- **Deficient Condition Summary**
  - Failure to initiate and follow-up for timely corrective action.
- **Action**
  - CAR YMQAD-96-C005 issued 4/10/96.
  - CAR response accepted by YMQAD.
  - OQA will provide a resident YMQAD representative to provide assistance and implementation expertise.
- **Status**
  - In process.
  - Scheduled for resolution on or before 9/30/96.
- **Impacts**
  - To date, no significant impacts to USGS work products have been identified.

ATTACHMENT 5

YUCCA MOUNTAIN PROJECT

Studies

Update on Status of Documenting Decisions

Presented to:
DOE/NRC Bimonthly Management Meeting

Presented by:
April V. Gil
Licensing Team Leader
Yucca Mountain Site Characterization Office

Complete by August

July 1, 1996

U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

Status

- DOE is concerned about sufficient documentation for licensing
- LSS and Records Management working groups have been addressing/discussing the issue
- NRC has expressed concern regarding the adequacy of DOE's decision documentation

Status
Decision Documentation

- DOE is developing a position paper on "Decision Documentation in a Licensing Environment" that will include:
  - the process for documenting decisions
  - the level of detail required for documentation

Status
Decision Documentation
(Continued)

- DOE will ensure processes are in place to adequately document the establishment of, or changes to, technical activities or controls

  – Discussions with the NRC will help us to establish a common understanding of the decisions that should be formally documented

Decisions Requiring Documentation

- All documented decisions do not require the same level of documentation detail
- DOE decisions requiring documentation include
  - Statutory - Major agency decisions or recommendations such as Site Recommendation, License Application or NEPA documentation
  - Management - Establishment of, or changes to, the Program Plan, annual or long range schedules, or budgets that impact critical activities
  - Technical - Establishment of, or changes to, activities or controls in scientific studies, design, construction, performance assessment, reportability issues, etc.

assumptions?

Decisions Requiring Documentation
(Continued)

- The level of documentation detail should reflect the importance of the decision
  - Decision document - Some processes or procedures are in place that provide a method of documenting decisions. Where no process is defined, the decision document may be a letter or memo to file
  - Supporting documentation - Any documentation process should provide a listing of those documents or considerations, both pro and con, used in making the decisions

Conclusions

- We believe the DOE developed position is in compliance with current regulatory expectations/requirements

- We will continue to evaluate the adequacy of our documentation processes and discuss with NRC

Back-Up Slides

Processes That Document Decisions

- Existing Processes - Adequate or may require simple modification to produce documentation of decisions
  - Change Control, Progress Reports, Topical Reports
- Planned or Proposed Processes
  - Statutorily Required Decisions - Completion of the milestones defining Administrative Records for the SR, the EIS ROD and LA
  - PISA - Documentation of the technical assessment or decisions associated with PISA
  - Administrative Procedure - Outline the requirements for documentation of any decision not covered under current practices

Example of Decisions Requiring Documentation

- **Site Recommendation**
  - **The administrative record will be a record of appropriate documents supporting the development of the Site Recommendation**
- **Administrative Record Level of Detail**
  - **Will include a compilation of a history of the development of the supporting documents. For each supporting document, a compilation will be made of all information that was directly considered in its development, the assumptions that were made, and a rationale for why the considered information was or was not used.**

ATTACHMENT 6

YUCCA MOUNTAIN PROJECT

Studies

Total System Performance Assessment '95 Technical Exchange - DOE Response to NRC'S Review

Presented to:
DOE/NRC Bimonthly Management Meeting

Presented by:
Abraham Van Luik
Persormance Assessment Team Lead
Yucca Mountain Site Characterization Office

July 1, 1996

U.S. Department of Energy
Office of Civilian Radioactive
Waste Management

A Technical Exchange (TE) is Only as Good as its Follow-Up

- Things were learned on 'both sides of the aisle' in this TE
- Several items were identified that need to be addressed in follow-up work by either the DOE, the NRC, or both
- This presentation addresses items listed by the NRC staff in the preceding presentation as needing DOE follow-up

General Observations on the TSPA '95 Technical Exchange

- NRC performance assessors reading TSPA '95, and reproducing selected analyses, was enlightening for DOE
  - Some assumptions were not stated or, at least, not clearly stated
  - Some analyses were not reproducible based solely on what was in the document
  - Lessons-learned (re: fuller documentation) are to be reflected in future DOE TSPAs

More Completely Addressing Spatial Correlation of Properties

- DOE is aware of the need to include spatial correlations in hydrologic modeling, at least at the process level
- DOE will address and evaluate spatial correlations in TSPA-VA
- In response to the TE, a new TSPA '95 calculation was performed with and without correlating percent fracture flow and velocities: little impact on peak dose

Re-evaluating Relative Humidity and Temperature Calculations

- The TSPA '95 "relative humidity" was actually the vapor-pressure (Pv) ratio:
  - Pv at the dry-out front divided by the saturated Pv at the waste package
  - This Pv ratio is the quantity needed for corrosion rate calculations
- Re: temperatures -- physical dimension and properties differences explain differing NRC and DOE model results
- Re-evaluation continues

Preliminary Results from Re-Evaluating Temperature Calculations

- Temperatures calculated with 3-D models are higher than those calculated with 2-D models (TSPA '95 was 2-D; NRC used both)
- The method of handling heat transfer in open drifts (i.e., before backfill) should be radiation-dominated -- perhaps with a convective component
- TSPA '95: radiative-transfer with lower thermal conductivity for drift -- making early container temperatures higher and lowering the temperature spike after backfilling

Waste Package Degradation Modeling Discussion

- In response to NRC discussion of issues, several DOE attendees described ongoing and planned work and the general approach
- DOE was interested in the basis for the NRC's approach to pit growth modeling
  - One reference provided at the TE
  - Other references recently sent to DOE

Infiltration and Deep Percolation Discussions

- It was observed that calculated TSPA '95 fracture velocities did not explicitly include saturation
  - A follow-on sensitivity study showed minor differences if saturation was included
- In discussions, it was noted that process-level UZ flow modeling is in progress and is addressing
  - Consistency with observations
  - Climate change effects

Saturated Zone Flow and Transport Discussion

- NRC interpretations of field data for mixing depths and flux values were of great interest to DOE
- DOE (TSPA '93 and '95) modeling of the SZ used field data
- It was again noted that process-level flow and transport models (both UZ and SZ) development is in progress

Differences Between IPA-2 and TSPA '95 Results

- Discussion focused on differences in arrival and value of Np-237 peak doses
- Differences in waste package failure, hydrologic, and stratigraphic modeling play an important role
- DOE is evaluating assumed Np-237 solubility and sorption differences
- Early results suggest differing Np solubilities do not explain dose differences

Continuing DOE Work

- NRC criticisms on TSPA '95 were received and are being evaluated: early results continue to support DOE's belief that TSPA '95 is a robust product
- An outline of the TSPA-VA Chapter of the PISA will be created to address "completeness," "transparency," and "traceability" issues more systematically
- Part of preparation for TSPA-VA will be more fully addressing the issues raised in this TE and in the NRC Audit Review Report due later this calendar year

ADMINISTRATIVE SUGGESTIONS FROM TSPA TECHNICAL EXCHANGE

- Use no more than one half of allocated time for presentations. They should provide a bases for discussion not be a tutorial.
- After every presentation prepare a list of issues for discussion at the working sessions. Make sure participants know before hand.
- All parties should participate in the end of day organization and prioritization of issues.
- Choose technical discussion leaders and facilitator. Determine discussion group objectives early (during agenda discussions, for example)
- Run discussion groups one after the other so that everyone can participate in each. From a practical perspective, this may not be possible.
- Keep scope small enough and leave enough time to produce a short written consensus summary at the end (may be after formal closing- as long as every party that wants to can attend)